

Patent Claims

1. Ophthalmologic device comprising a controllable illumination unit (1), an observation system, an image recording unit (4), a central control unit (6), an output unit, an eye tracker unit (8), and means for relative positioning of the ophthalmologic device with respect to the eye (12) to be examined, wherein the imaging system of the eye tracker unit (8) has at least two different adjustable magnifications.

2. Ophthalmologic device according to claim 1, wherein the imaging system of the eye tracker unit (8) is a zoom objective or an interchangeable objective.

3. Ophthalmologic device according to at least one of the preceding claims, wherein the image recording unit (4) is a digital high-resolution camera with a high image rate which can have a tilting device for tilting the camera chip relative to the optical axis for Scheimpflug correction and/or is capable of recording and storing image sequences.

4. Ophthalmologic device according to at least one of the preceding claims, wherein the optical image recording unit (4) operates synchronous with the image rate of the digitally controllable illumination unit (1).

5. Ophthalmologic device according to at least one of the preceding claims, wherein the central control unit (6) has a user interface with conventional input devices such as keyboard (9), mouse (10), trackball, joystick, or the like, and/or has different control modes and evaluating modes.

6. Ophthalmologic device according to at least one of the preceding claims, wherein the output unit is a monitor (7) and/or printer.

7. Method for positioning an ophthalmologic device, wherein the patient's eye (12) is brought to a fixed position by means of an existing chin rest and forehead support (13, 14), the eye tracker unit (8), with the wide-angle setting of its imaging system selected, supplies signals containing the coordinates of the eye (12) relative to the eye tracker unit (8) and, therefore, also relative to the optical axis (15) of the ophthalmologic device itself, generates a corresponding reference value from these signals with respect to amount and

direction for the positioning device, and supplies this reference signal to the positioning device, the alignment is carried out by means of continuous detection of the eye position and relative movement, and the magnification of the imaging system of the eye tracker unit (8) is changed after alignment in x-direction and y-direction.

8. Method for positioning an ophthalmologic device according to at least one of the preceding claims, wherein an alignment of the ophthalmologic device in z-direction is carried out after alignment has been carried out in x-direction and y-direction and after the aperture angle of the imaging system of the eye tracker unit (8) has been changed.

9. Method for positioning an ophthalmologic device according to at least one of the preceding claims, wherein the detection of the eye (12) by the eye tracker unit (8) is carried out in such a way that in evaluating the image of the eye (12) generated by illumination the pupil center is exactly determined and the tracking of the light marks is carried out by continuous detection of the pupil by means of the eye tracker unit (8).

10. Method for positioning an ophthalmologic device according to at least one of the preceding claims, wherein searching of illumination patterns in digital images can be carried out by means of differential image recordings in that two images which are recorded in direct succession in time with a change exclusively in the illumination pattern are subtracted and all interfering spatially fixed image information is accordingly eliminated.